

10. 11. 12. 13. 14. 00C# 146

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> 9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

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FAX 906-9210 (503) 906-9200

FAX 382-7588 (541) 383-9310

Work Order #: CHAIN OF CUSTODY REPORT TURNAROUND REOUEST in Business Days\* INVOICE TO: BRISTOL Organic & Inorganic Analyses REPORT TO: PANE KRANAWETTER 4 3 ADDRESS: AMCHITKA SUAND, AK STD. Petroleum Hydrocarbon Analyses 2 PHONE: 907.770.0974 FAX: 790.0975 3 P.O. NUMBER: 21090 PROJECT NAME: AMCHITKA REQUESTED ANALYSES Please Specify **OTHER** PROJECT NUMBER: 21090 beey STEX Joc FAH 17C AUXICEM \*Turnaround Requests less than standard may incur Rush Charges. SAMPLED BY: NCA WO #OF MATRIX SAMPLING CLIENT SAMPLE (W, S, O) CONT. COMMENTS ID IDENTIFICATION DATE/TIME 5 3 1.01 AM BLU03 5L 7/3/01\_1555 2.01 AMB6 UCYSL 7/3/01 1600 5 3 3.9 AMB60055L 7/3/01 1605 3 5 401AMBBJ065C 7/3/21 1010 3 501AMB6 JO756 191501 15 6.01 AMBGO 0656 715/01 RELINQUISHED BY: Ann Kranawetts

PRINT NAME: Ann Kranawetts FIRM: BRISTOL

RELINQUISHED BY: MEAN PRINT PRINT NAME: MUSTAHSAN FIRM: NCA DATE: 7/3/01 DATE: 73.01 TIME: 1736 DATE: Rachel Accile PRINT NAME: FIRM: PLON TIME: TIME: ADDITIONAL REMARKS: Duy-bated underground Storage tonk TEMP: 8

B-6



425 420 9200 fax 425 420 9210 **Spokane**425 420 9200 fax 425 420 9210

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541.383.9310 fax 541.382.7588

1 December, 2001

Anne Krarawetter Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

RE: Amchitka

Enclosed are the results of analyses for samples received by the laboratory on 07/06/01 18:38. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jerry Orlando

Project Manager/QA

for Oloulo

Work Orders included in this report:

P1G0209



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303 324-3200 Tax 503-324-3250 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503 906-9200 Tax 503-906-9210 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 541-383-9310 Tax 541-382-7588 Portland

Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 210901, PO# 21090 Project Manager: Anne Krarawetter

Reported:

07/31/01 12:36

#### ANALYTICAL REPORT FOR SAMPLES

	<del></del>			
Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
01AMB6U03SL	P1G0209-01	Soil	07/03/01 15:55	07/06/01 18:38
01AMB6U04SL	P1G0209-02	Soil	07/03/01 16:00	07/06/01 18:38
01AMB6U05SL	P1G0209-03	Soil	07/03/01 16:05	07/06/01 18:38
01AMB6U06SL	P1G0209-04	Soil	07/03/01 16:10	07/06/01 18:38

North Creek Analytical - Portland

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jerry Orlando, Project Manager/QA

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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

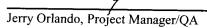
Project Number: 210901, PO# 21090 Project Manager: Anne Krarawetter

Reported: 07/31/01 12:36

Gasoline Range Organics (n-Hexane to <n-Decane) and BTEX per AK101 and EPA 8021B North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Note
01AMB6U03SL (P1G0209-01) Soil				_	Sampled: 07/03	3/01 Rece	ived: 07/06/	01	·
Gasoline Range Organics	ND	4.00	mg/kg dry	1	AK101/8021B	07/10/01	07/10/01	1071099	
Benzene	ND	0.100	"	**	"	11	07/10/01	10/1099	
Toluene	ND	0.100	**	**	**	11	"	**	
Ethylbenzene	ND	0.100	**	**	**	11	"	**	
Xylenes (total)	ND	0.100	"	**	"	"	**	"	
Surr: a,a,a-TFT (FID)	116%	60-140							
Surr: a,a,a-TFT (PID)	100 %	60-140							
01AMB6U04SL (P1G0209-02) Soil					Sampled: 07/03	3/01 Rece	ived: 07/06/	01	
Gasoline Range Organics	4.20	3.39	mg/kg dry	1	AK101/8021B	07/10/01	07/10/01	1071099	
Benzene	ND	0.0847	11	#	"	"	11	10/1099	
Toluene	ND	0.0847	*1	**	11	**	**	**	
Ethylbenzene	ND	0.0847	ш		**	**	"	**	
Xylenes (total)	ND	0.0847	"	10	*1	**	"	ıı	
Surr: a,a,a-TFT (FID)	116 %	60-140							
Surr: a,a,a-TFT (PID)	99.2 %	60-140							
01AMB6U05SL (P1G0209-03) Soil					Sampled: 07/03	3/01 Recei	ived: 07/06/0	01	
Gasoline Range Organics	4.06	4.00	mg/kg dry	1	AK101/8021B	07/10/01	07/10/01	1071099	****
Benzene	ND	0.100	"	"	"	"	"	"	
Toluene	0.249	0.100	**	**	"	"	11	**	
Ethylbenzene	ND	0.100	**	"	**	"	11	**	
Xylenes (total)	0.212	0.100	**	11	**	11	**	**	
Surr: a,a,a-TFT (FID)	115 %	60-140							
Surr: a,a,a-TFT (PID)	98.2 %	60-140							

North Creek Analytical - Portland





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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 210901, PO# 21090 Project Manager: Anne Krarawetter

Reported: 07/31/01 12:36

Gasoline Range Organics (n-Hexane to <n-Decane) and BTEX per AK101 and EPA 8021B North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes			
01AMB6U06SL (P1G0209-04) Soil	Sampled: 07/03/01 Received: 07/06/01											
Gasoline Range Organics	ND	2.25	mg/kg dry	1	AK101/8021B	07/10/01	07/10/01	1071099				
Benzene	ND	0.0563	"	"	"	11	07/10/01	10/1099				
Toluene	ND	0.0563	**	"	"	,,	"	"				
Ethylbenzene	ND	0.0563	"	**	11	**	**	"				
Xylenes (total)	ND	0.0563	"	**	"	**	"	"				
Surr: a,a,a-TFT (FID)	110 %	60-140						·				
Surr: a,a,a-TFT (PID)	93.5 %	60-140										



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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1

Project: Amchitka

Project Number: 210901, PO# 21090

Reported:

Anchorage, AK 99502-1116

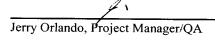
Project Manager: Anne Krarawetter

07/31/01 12:36

### Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/103 North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMB6U03SL (P1G0209-01) Soil					Sampled: 07/0	3/01 Rece	ived: 07/06/	01	***
Diesel Range Organics	107	25.0	mg/kg dry	1	AK102/103	07/12/01	07/16/01	1071212	
Residual Range Organics	ND	50.0	"	"		**	**	11	
Surr: 1-Chlorooctadecane	84.1 %	75-125							
Surr: Triacontane	124 %	50-150							
01AMB6U04SL (P1G0209-02) Soil					Sampled: 07/0	3/01 Rece	ived: 07/06/	01	
Diesel Range Organics	40.2	25.0	mg/kg dry	1	AK102/103	07/12/01	07/16/01	1071212	
Residual Range Organics	ND	50.0	11	**	н	"	"	"	
Surr: 1-Chlorooctadecane	80.4 %	75-125							-
Surr: Triacontane	123 %	50-150							
01AMB6U05SL (P1G0209-03) Soil					Sampled: 07/0	3/01 Rece	ived: 07/06/	01	
<b>Diesel Range Organics</b>	63.6	25.0	mg/kg dry	1	AK102/103	07/12/01	07/16/01	1071212	
Residual Range Organics	ND	50.0	"		11	n	**	**	
Surr: 1-Chlorooctadecane	84.3 %	75-125							
Surr: Triacontane	121 %	50-150							
01AMB6U06SL (P1G0209-04) Soil					Sampled: 07/0	3/01 Rece	ived: 07/06/	01	
Diesel Range Organics	880	25.0	mg/kg dry	1	AK102/103	07/12/01	07/16/01	1071212	•
Residual Range Organics	54.8	50.0	"		"	**	**	"	D-11
Surr: 1-Chlorooctadecane	94.4 %	75-125							
Surr: Triacontane	122 %	50-150							

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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 210901, PO# 21090 Project Manager: Anne Krarawetter

Reported: 07/31/01 12:36

# Total Metals per EPA 6000/7000 Series Methods

### North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMB6U03SL (P1G0209-01) Soil				5	Sampled: 07/0	3/01 Rece	ived: 07/06/	01	
Arsenic	1.93	0.500	mg/kg dry	1	EPA 6020	07/20/01	07/21/01	1071499	
Barium	136	1.00	"	10	11	11	*1	"	
Cadmium	ND	0.500	"	**	**	11	*1	**	
Chromium	6.06	0.500	**	н	**	**	*1	**	
Lead	7.93	0.500	Ħ	**	**	**	**	**	
Nickel	11.5	1.00	**	11	**	11	07/21/01	**	
Vanadium	178	2.50	"	1	**	"	07/21/01	n	
01AMB6U04SL (P1G0209-02) Soil				S	Sampled: 07/0	3/01 Rece	ived: 07/06/	01	
Arsenic	4.09	0.500	mg/kg dry	1	EPA 6020	07/20/01	07/21/01	1071499	
Barium	49.9	1.00	"	10	**	11	07/21/01	11	
Cadmium	ND	0.500	**	**	71	11	07/21/01	II.	
Chromium	5.77	0.500	**	11	11	**	**	11	
Lead	38.8	0.500	**	н	Ħ	"	**	Ħ	
Nickel	15.8	1.00	**		71	"	07/21/01	**	
Vanadium	109	2.50	**	1	**	#	11	Ħ	
01AMB6U05SL (P1G0209-03) Soil				S	Sampled: 07/0	3/01 Rece	ived: 07/06/	01	
Arsenic	2.25	0.500	mg/kg dry	1	EPA 6020	07/20/01	07/21/01	1071499	
Barium	77.0	1.00	"	10	H	0	07/21/01	"	
Cadmium	ND	0.500	Ħ	11	tr .	11	07/21/01	н	
Chromium	5.63	0.500	**	11	Ħ	**	"	"	
Lead	6.43	0.500	**	11	**	11	"	n .	
Nickel	10.6	1.00	"	**	**	**	07/21/01	"	
Vanadium	178	2.50	"	1	**	**	"		

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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 210901, PO# 21090 Project Manager: Anne Krarawetter

Reported:

07/31/01 12:36

## Total Metals per EPA 6000/7000 Series Methods

North Creek Analytical - Portland

nalyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMB6U06SL (P1G0209-04) Soil				S	Sampled: 07/0	3/01 Rece	ived: 07/06/	01	
Arsenic	1.50	0.500	mg/kg dry	1	EPA 6020	07/20/01	07/21/01	1071499	
Barium	81.8	1.00	"	10	11	"	07/21/01	"	
Cadmium	ND	0.500	"	**	11	11	07/21/01	*1	
Chromium	6.95	0.500	0	**	**		"	**	
Lead	4.67	0.500	0	**	11	**	**	**	
Nickel	10.4	1.00	11	**	11		07/21/01	**	
Vanadium	176	2.50	**	1	**	11	11	**	

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Jerry Orlando, Project Manager/QA

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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 210901, PO# 21090 Project Manager: Anne Krarawetter

Reported: 07/31/01 12:36

### Polychlorinated Biphenyls per EPA Method 8082 North Creek Analytical - Portland

1401 til Creek Analytical - Portland												
Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	No			
01AMB6U03SL (P1G0209-01) Soil					Sampled: 07/0	)3/01 Rece	ived: 07/06/	01				
Aroclor 1016	ND	67.0	ug/kg dry	1	EPA 8082	07/14/01	07/18/01	1071259				
Aroclor 1221	ND	134	"	"	"	#	07/10/01	10/1239				
Aroclor 1232	ND	67.0	"	**	"	**	"	**				
Aroclor 1242	ND	67.0	"	**	**	11	**	,,				
Aroclor 1248	ND	67.0	**	**	"	"	Ħ					
Aroclor 1254	ND	67.0	"	u u	**	11	,,	**				
Aroclor 1260	ND	67.0	***	"	"	m		**				
Surr: 2,4,5,6-Tetrachloro-m-xylene	80.2 %	63-119										
Surr: Decachlorobiphenyl	102 %	52-131										
01AMB6U04SL (P1G0209-02) Soil				S	Sampled: 07/0	03/01 Rece	ived: 07/06/	01				
Aroclor 1016	ND	67.0	ug/kg dry	1	EPA 8082	07/14/01	07/18/01	1071259				
Aroclor 1221	ND	134	" " " " " "		"	07/14/01	07/16/01	10/1239				
Aroclor 1232	ND	67.0	**	11	**	*1	11					
Aroclor 1242	ND	67.0	**	**	**		**	"				
Aroclor 1248	ND	67.0	11	"	**		**	"				
Aroclor 1254	ND	67.0	**	"	"	**	"	**				
Aroclor 1260	ND	67.0	**	"	br.	**	11	**				
Surr: 2,4,5,6-Tetrachloro-m-xylene	76.0 %	63-119					·					
Surr: Decachlorobiphenyl	97.4 %	52-131										
01AMB6U05SL (P1G0209-03) Soil				S	Sampled: 07/0	3/01 Recei	ived: 07/06/0	01				
Aroclor 1016	ND	67.0	ug/kg dry	1	EPA 8082	07/14/01	07/18/01	1071259				
Aroclor 1221	ND	134	"	"	"	#	11	10/1239				
Aroclor 1232	ND	67.0	"	"	n	**	"	n .				
Aroclor 1242	ND	67.0	"	"	11	**	**	"				
Aroclor 1248	ND	67.0	"	**	**	n	"	"				
Aroclor 1254	ND	67.0	"	**	**	**	"	,,				
Aroclor 1260	ND	67.0	**	"	**	н	**	"				
Surr: 2,4,5,6-Tetrachloro-m-xylene	71.1 %	63-119										
Surr: Decachlorobiphenyl	103 %	52-131										

North Creek Analytical - Portland





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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 210901, PO# 21090 Project Manager: Anne Krarawetter

**Reported:** 07/31/01 12:36

## Polychlorinated Biphenyls per EPA Method 8082 North Creek Analytical - Portland

nalyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes				
01AMB6U06SL (P1G0209-04) Soil		Sampled: 07/03/01 Received: 07/06/01											
Aroclor 1016 Aroclor 1221	ND ND	67.0	ug/kg dry	1	EPA 8082	07/14/01	07/19/01	1071259	*				
Aroclor 1232	ND ND	134 67.0	"	"	"	"	"	11					
Aroclor 1242 Aroclor 1248	ND ND	67.0 67.0	"	11	"	**	11	"					
Aroclor 1254 Aroclor 1260	ND	67.0		11	**	"	"	11					
Surr: 2,4,5,6-Tetrachloro-m-xylene Surr: Decachlorobiphenyl	ND 59.3 % 91.4 %	67.0 63-119 52-131	11	н			"		S-07				

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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 210901, PO# 21090

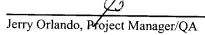
Project Manager: Anne Krarawetter

Reported: 07/31/01 12:36

Volatile Organic Compounds per EPA Method 8260B North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMB6U03SL (P1G0209-01) Soil					Sampled: 07/0	3/01 Recei	ved: 07/06/	01	
Acetone	ND	2500	ug/kg dry	1	EPA 8260B	07/16/01	07/17/01	1071301	
Benzene	ND	100	"	n	Ħ	11	11	11	
Bromobenzene	ND	100	#	н	**		11	"	
Bromochloromethane	ND	100	**	11	11	n n	"	#1	
Bromodichloromethane	ND	100	**	11	**	"	**	**	
Bromoform	ND	100	"	**	**		**	**	
Bromomethane	ND	500	11	н	"	**	**		
2-Butanone	ND	1000	"	**	11	#	"	"	
n-Butylbenzene	ND	500	11	**	"	**	н	**	
sec-Butylbenzene	ND	100	tt	**	**	. #		**	
tert-Butylbenzene	ND	100	**	**	**	**	ıı	"	
Carbon disulfide	ND	1000	**	**	**	*1	"	**	
Carbon tetrachloride	ND	100	n	**	††		11	,,	
Chlorobenzene	ND	100	11	"	**	"	"	"	
Chloroethane	ND	100			**		,,	,,	
Chloroform	ND	100	0	"	**	"	"	,,	
Chloromethane	ND	500	"	**	**	"	11		
2-Chlorotoluene	ND	100		97	tı		11	,,	
4-Chlorotoluene	ND	100		**	**	"	"	,,	
1,2-Dibromo-3-chloropropane	ND	500	11	"		"	**	,,	
Dibromochloromethane	ND	100	**	"	"	,,	11	**	
1,2-Dibromoethane	ND	100	**	,,	**	"	**	*1	
Dibromomethane	ND	100	11	11	**	"	"	u	
1,2-Dichlorobenzene	ND	100	н	11	*1	"	"	11	
1,3-Dichlorobenzene	ND	100	"	"	**	**	Ħ	"	
1,4-Dichlorobenzene	ND	100	"	11	"	**	**		
Dichlorodifluoromethane	ND	500	11	**	n	"	11	II.	
1,1-Dichloroethane	ND	100	"	11		"	. "	**	
1,2-Dichloroethane	ND	100	"	**		н ,	"	**	
1,1-Dichloroethene	ND	100	n	**	**	n	**	**	
cis-1,2-Dichloroethene	ND	100	"		**	n	"	11	
trans-1,2-Dichloroethene	ND	100	"		**	11	**	n	
1,2-Dichloropropane	ND	100	11	"	"	**	ü	**	
1,3-Dichloropropane	ND	100	11	"		**	u u	**	
2,2-Dichloropropane	ND	100	Ħ	11	**	**	u u	**	
1,1-Dichloropropene	ND	100	**	"	11	"	**	Ħ	
cis-1,3-Dichloropropene	ND	100	"		**	**	**	n	
trans-1,3-Dichloropropene	ND	100	"	ıı .	"	"	**	n	
Ethylbenzene	ND	100	ıı .	11	**		**	H	
J	1112	100							

North Creek Analytical - Portland





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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 210901, PO# 21090 Project Manager: Anne Krarawetter

Reported: 07/31/01 12:36

## Volatile Organic Compounds per EPA Method 8260B North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Note
01AMB6U03SL (P1G0209-01) Soil					Sampled: 07/0	3/01 Rece	ived: 07/06/	01	
Hexachlorobutadiene	ND	200	ug/kg dry	1	EPA 8260B	07/16/01	07/17/01	1071301	
2-Hexanone	ND	1000	"	"	"	110/01	07/17/01	10/1301	
Isopropylbenzene	ND	200	0	**	11	**	**	**	
p-Isopropyltoluene	ND	200	tt	11	**	n n	"		
4-Methyl-2-pentanone	ND	500		11	**	"	n	**	
Methyl tert-butyl ether	ND	100	**	**	"	"	,,	"	
Methylene chloride	ND	500	Ħ	0	**	11	"	"	
Naphthalene	ND	200	"	**	**	**	**	11	
n-Propylbenzene	ND	100	**	**	**	"	,,	"	
Styrene	ND	100	**	"	**	"	"	"	
1,1,1,2-Tetrachloroethane	ND	100	"	"	11	**	,,	#	
1,1,2,2-Tetrachloroethane	ND	100	n	**	***	**	**	,,	
Tetrachloroethene	ND	100	**	11	"	"	"	,,	
Toluene	ND	100	*1		"	"	**	**	
1,2,3-Trichlorobenzene	ND	100	"	"	"	u		n	
1,2,4-Trichlorobenzene	ND	100	"	**	**		"	11	
1,1,1-Trichloroethane	ND	100	**	11	"	**	11	**	
1,1,2-Trichloroethane	ND	100	**	"	"	**	**	**	
Trichloroethene	ND	100	"	"	"	**	**	**	
Trichlorofluoromethane	ND	100	**	**	**			"	
1,2,3-Trichloropropane	ND	100	**	*1	**	11		**	
1,2,4-Trimethylbenzene	ND	100	**	**	**	#	11	**	
1,3,5-Trimethylbenzene	ND	100	*1	"	**	#	**	**	
Vinyl chloride	ND	100	**	"	,,	"	11	**	
o-Xylene	ND	100		**		**	**	"	
n,p-Xylene	ND	200		**		**	**	**	
Surr: 4-BFB	100 %	70-130							
Surr: 1,2-DCA-d4	81.1 %	70-130							
Surr: Dibromofluoromethane	84.2 %	70-130							
Surr: Toluene-d8	96.4 %	70-130							

North Creek Analytical - Portland



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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1

Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 210901, PO# 21090 Project Manager: Anne Krarawetter

Reported: 07/31/01 12:36

## Volatile Organic Compounds per EPA Method 8260B North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Note:
01AMB6U04SL (P1G0209-02) Soil					Sampled: 07/0	<u> </u>	ived: 07/06/0		14010
Acetone	ND	2110	ug/kg dry	1					
Benzene	ND	84.3	ug/kg ury	11	EPA 8260B	07/16/01	07/17/01	1071301	
Bromobenzene	ND	84.3	**	**	,,	"		11	
Bromochloromethane	ND	84.3	"	**		"	**	Ħ	
Bromodichloromethane	ND	84.3	"	,,	"	"	"	Ħ	
Bromoform	ND	84.3	**		"	"	**	11	
Bromomethane	ND	421	"	**	"	"	"	**	
2-Butanone	ND	843	n		,,	"	"	11	
n-Butylbenzene	ND	421	"	,,	"	"	"	11	
sec-Butylbenzene	ND	84.3	n	"	"	"	11	"	
ert-Butylbenzene	ND	84.3	"	"	"	"	"	"	
Carbon disulfide	ND	843	H	**	"	"			
Carbon tetrachloride	ND	84.3	"	"	" "	"	"	"	
Chlorobenzene	ND	84.3	н	"	"	,,	**	"	
Chloroethane	ND	84.3	**	,,	"		Ħ	m .	
Chloroform	ND	84.3	11	 n	"	"	11	11	
Chloromethane	ND	64.3 421	**	"	"	"	11	u	
2-Chlorotoluene	ND ND	84.3	"	**	"	**	**	"	
4-Chlorotoluene	ND ND	84.3	**	"	,,	**	**	11	
,2-Dibromo-3-chloropropane	ND ND	64.3 421	**	"	"	"	"	"	
Dibromochloromethane	ND ND	84.3	,,	**	**	"	"		
,2-Dibromoethane	ND	84.3	"	,,	**		"	"	
Dibromomethane	ND ND	84.3	,,	**	"	,,	"	"	
,2-Dichlorobenzene	ND	84.3		*1	11		"	**	
1,3-Dichlorobenzene	ND	84.3	,,	"	,,	,,	"	"	
,4-Dichlorobenzene	ND	84.3		**	"	11	**	"	
Dichlorodifluoromethane	ND	421	11	"	**	,,	"	"	
,1-Dichloroethane	ND	84.3	**	,,	"	,,	"	"	
,2-Dichloroethane	ND	84.3	**	,,		н	**		
,1-Dichloroethene	ND	84.3	**	**		"	,,		
cis-1,2-Dichloroethene	ND	84.3	**	**	**	**	"	11	
rans-1,2-Dichloroethene	ND	84.3		**	11	**	n	**	
,2-Dichloropropane	ND	84.3			**	**	"	*1	
,3-Dichloropropane	ND	84.3	11		"	0	**		
2,2-Dichloropropane	ND	84.3	11	**	**	11	**	"	
,1-Dichloropropene	ND	84.3	**	**	**	"	11	11	
cis-1,3-Dichloropropene	ND	84.3	**	**	H	11		#	
rans-1,3-Dichloropropene	ND	84.3	**		"	"	"	#	
Ethylbenzene	ND	84.3	**	,,		"		,,	

North Creek Analytical - Portland



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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 210901, PO# 21090 Project Manager: Anne Krarawetter

Reported: 07/31/01 12:36

## Volatile Organic Compounds per EPA Method 8260B North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Note		
01AMB6U04SL (P1G0209-02) Soil	Sampled: 07/03/01 Received: 07/06/01										
Hexachlorobutadiene	ND	169	ug/kg dry	1	EPA 8260B	07/16/01	07/17/01	1071301			
2-Hexanone	ND	843	"	,,	"	17710701	0//1//01	10/1301			
sopropylbenzene	ND	169	**	"			ff	11			
o-Isopropyltoluene	ND	169	н	**	**	**		"			
l-Methyl-2-pentanone	ND	421	Ħ		**	.,	**	"			
Methyl tert-butyl ether	ND	84.3	"	**	**	"	"	,,			
Methylene chloride	ND	421	H	**	**	"	,,	"			
Naphthalene	ND	169	**	Ħ	11	"	"	**			
-Propylbenzene	ND	84.3	n n	**	**	11	"				
Styrene	ND	84.3	**	"	**	"	**	11			
,1,1,2-Tetrachloroethane	ND	84.3	**	**	11	11	"	"			
,1,2,2-Tetrachloroethane	ND	84.3		**	**	11	ıı	**			
etrachloroethene	ND	84.3		11	**	**	"	"			
oluene	ND	84.3	**	"	"	"	"	**			
,2,3-Trichlorobenzene	ND	84.3	**	"	11	**	**	**			
,2,4-Trichlorobenzene	ND	84.3	**	**	**	n	"	,,			
,1,1-Trichloroethane	ND	84.3	"	"	"	**	"				
,1,2-Trichloroethane	ND	84.3	"	"	"	**	**				
richloroethene	ND	84.3	"	"	"	"	,,	**			
richlorofluoromethane	ND	84.3	**	"	11	**	**	**			
,2,3-Trichloropropane	ND	84.3	"	**	**	**	,,	*1			
,2,4-Trimethylbenzene	ND	84.3	"	"	"	**	"	"			
,3,5-Trimethylbenzene	ND	84.3		n	11	,,	,,				
inyl chloride	ND	84.3		11	n	**	,,	"			
-Xylene	ND	84.3		н	"	,,	11	"			
n,p-Xylene	ND	169	п	"	**	,,	"	"			
urr: 4-BFB	100 %	70-130							0=0-0		
Surr: 1,2-DCA-d4	79.9 %	70-130									
urr: Dibromofluoromethane	84.5 %	70-130									
'urr: Toluene-d8	96.4 %	70-130									

North Creek Analytical - Portland





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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 210901, PO# 21090 Project Manager: Anne Krarawetter

Reported: 07/31/01 12:36

## Volatile Organic Compounds per EPA Method 8260B North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Note
01AMB6U05SL (P1G0209-03) Soil					Sampled: 07/0		ived: 07/06/0		Note
Acetone	ND	2500	ug/kg dry						
Benzene	ND	100	ug/kg ury	1	EPA 8260B	07/16/01	07/17/01	1071301	
Bromobenzene	ND	100	tt	**	"	"	"	"	
Bromochloromethane	ND	100	"		"	"	"	n	
Bromodichloromethane	ND	100	"	"	"	H	u	**	
Bromoform	ND	100	"	"	"	"	"	"	
Bromomethane	ND	500	,,	"	"	"	**	11	
2-Butanone	ND	1000	**	"	"	"	"	"	
1-Butylbenzene	ND	500	"	"	"		**	"	
sec-Butylbenzene	ND	100	**	"	"	"	"	11	
ert-Butylbenzene	ND	100	**	"	**		"	11	
Carbon disulfide	ND	1000	11	,,		"	"	"	
Carbon tetrachloride	ND		11	**	"	***	"	**	
Chlorobenzene	ND ND	100	"	"	11	"	***	"	
Chloroethane	ND ND	100	"		**	Ħ	"	"	
Chloroform	ND ND	100 100	,,	"	11	**	"	**	
Chloromethane	ND	500	,,	"	**	"	"		
2-Chlorotoluene	ND ND	100	"	,,	"	17	"	**	
-Chlorotoluene	ND ND	100	,,	"	"	"	"	"	
,2-Dibromo-3-chloropropane	ND ND	500	"	"	"		**	**	
Dibromochloromethane	ND ND	100	"	"	"	**	u u	"	
,2-Dibromoethane	ND ND	100	"	" "	**	"	11	11	
Dibromomethane	ND ND		n	"	"	"	Ħ	**	
,2-Dichlorobenzene	ND ND	100 100	"	"	"	**	н	**	
,3-Dichlorobenzene	ND ND	100	**	"	"	,,	"	"	
,4-Dichlorobenzene	ND	100	**	11	"	,,	"	"	
Dichlorodifluoromethane	ND	500	**	,,		,,	"	"	
,1-Dichloroethane	ND	100	"	"		"	**	" "	
,2-Dichloroethane	ND	100	11	**	"		"	"	
,1-Dichloroethene	ND	100	**			**		"	
is-1,2-Dichloroethene	ND	100	,,	"	**	**		"	
rans-1,2-Dichloroethene	ND	100	"	17	**		11	,,	
,2-Dichloropropane	ND	100	**	**	.,	,,	"	"	
,3-Dichloropropane	ND	100	"	"	"	,,	"	"	
,2-Dichloropropane	ND	100	H	"	"	"	"	"	
,1-Dichloropropene	ND ND	100	"	**	,,	"	"	"	
is-1,3-Dichloropropene	ND ND	100	,,	,,	"	"	"		
rans-1,3-Dichloropropene	ND ND	100		"	"	"	"	"	
thylbenzene	ND ND	100	**	**		"	"	"	

North Creek Analytical - Portland

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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 210901, PO# 21090 Project Manager: Anne Krarawetter

Reported: 07/31/01 12:36

## Volatile Organic Compounds per EPA Method 8260B North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Note
01AMB6U05SL (P1G0209-03) Soil					Sampled: 07/0	3/01 Recei	ved: 07/06/	01	
Hexachlorobutadiene	ND	200	ug/kg dry	1	EPA 8260B	07/16/01	07/17/01		<del></del>
2-Hexanone	ND	1000	"8 "-87	,	# #	"	0//1//01	1071301	
Isopropylbenzene	ND	200	**	**	,,	"	"	**	
p-Isopropyltoluene	ND	200	**	**	11	н	**	"	
4-Methyl-2-pentanone	ND	500	11	"	**	11	"	**	
Methyl tert-butyl ether	ND	100	0	"	u u	**	,,	**	
Methylene chloride	ND	500		Ħ	**	"	"	"	
Naphthalene	ND	200	**	"	"	"	**	"	
n-Propylbenzene	ND	100	**	**	n	11	u u	**	
Styrene	200	100		**	••	**	,,	"	
1,1,1,2-Tetrachloroethane	ND	100	"	**	**	**	"	11	
1,1,2,2-Tetrachloroethane	ND	100	**	"	11	**	,,	**	
Tetrachloroethene	ND	100	"	**	u u	**	**	,,	
Toluene	371	100	"	**	"	11	"	**	
1,2,3-Trichlorobenzene	ND	100	**		**	**		**	
1,2,4-Trichlorobenzene	ND	100	"	**		**	"	,,	
1,1,1-Trichloroethane	ND	100	n	н	и	*11	**		
1,1,2-Trichloroethane	ND	100	н	"	"	0	*1	11	
Trichloroethene	ND	100	**		**	"	**	"	
Trichlorofluoromethane	ND	100	"	11	. ,,,	11	"	**	
1,2,3-Trichloropropane	ND	100	"	**	,,	**	"	,,	
1,2,4-Trimethylbenzene	ND	100	"	**	,,	**	"		
1,3,5-Trimethylbenzene	ND	100	11	**	11	**	**	"	
Vinyl chloride	ND	100	"	11	**	"	**	11	
o-Xylene	ND	100	**	"	11	11	**	"	
m,p-Xylene	ND	200	**	"	**	11	ti	"	
Surr: 4-BFB	98.2 %	70-130							
Surr: 1,2-DCA-d4	80.7 %	70-130							
Surr: Dibromofluoromethane	85.2 %	70-130							
Surr: Toluene-d8	97.8 %	70-130							

North Creek Analytical - Portland



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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 210901, PO# 21090 Project Manager: Anne Krarawetter

Reported: 07/31/01 12:36

## Volatile Organic Compounds per EPA Method 8260B North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMB6U06SL (P1G0209-04) Soil					Sampled: 07/0	3/01 Recei	ved: 07/06/0	01	
Acetone	ND	1410	ug/kg dry	1	EPA 8260B	07/16/01	07/17/01		
Benzene	ND	56.3	"	"	# "	07/10/01	07/17/01	1071301	
Bromobenzene	ND	56.3	**	**	**	"	11	**	
Bromochloromethane	ND	56.3	**	"	**	**	"		
Bromodichloromethane	ND	56.3	n n	н	"	"	**		
Bromoform	ND	56.3	"	11	**	**		**	
Bromomethane	ND	282	**	**	**	"	"	**	
2-Butanone	ND	563	**	**	**	"	**		
n-Butylbenzene	ND	282	11	11	**	"	н	,,	
sec-Butylbenzene	ND	56.3	**	**	**	"	,,	**	
tert-Butylbenzene	ND	56.3	H	**	"	"	**	"	
Carbon disulfide	ND	563	"	"	"	"	11	,,	
Carbon tetrachloride	ND	56.3	n	,,	**	**		,,	
Chlorobenzene	ND	56.3	**	**	*1	**	**	" H	
Chloroethane	ND	56.3	"	,,	"	,,	**	"	
Chloroform	ND	56.3	"		**	**	"	,,	
Chloromethane	ND	282	**	"	**	,,	"	"	
2-Chlorotoluene	ND	56.3	**	**	**	"	,,	"	
4-Chlorotoluene	ND	56.3	,,	**	**	,,	11	"	
1,2-Dibromo-3-chloropropane	ND	282		"	**	**	1)	,,	
Dibromochloromethane	ND	56.3	"	11	"	tr	11	,,	
1,2-Dibromoethane	ND	56.3	**	**	"	,,	**	"	
Dibromomethane	ND	56.3	11	**	**	,,	**	"	
1,2-Dichlorobenzene	ND	56.3	**	"	,,		**	"	
1,3-Dichlorobenzene	ND	56.3	**	**			"	"	
1,4-Dichlorobenzene	ND	56.3	**	11	,,	,,	**	"	
Dichlorodifluoromethane	ND ND	282	*1	**		"	**	"	
1,1-Dichloroethane	ND	56.3	"	"				**	
1,2-Dichloroethane	ND ND	56.3	.,	"			u u	"	
1,1-Dichloroethene	ND	56.3		,,	**	11	"	"	
cis-1,2-Dichloroethene	ND	56.3		"	**	11	"	"	
trans-1,2-Dichloroethene	ND	56.3	**	**	**	**	"	n	
1,2-Dichloropropane	ND	56.3	11	**	,,	**	11		
1,3-Dichloropropane	ND	56.3	**	"	"	"	**	" II	
2,2-Dichloropropane	ND	56.3		11	**		"	**	
1,1-Dichloropropene	ND ND	56.3	11	,,	**	,,	"	"	
cis-1,3-Dichloropropene	ND ND	56.3	"	**		"	"	**	
rans-1,3-Dichloropropene	ND ND	56.3	**	**	"	,,	"	"	
Ethylbenzene	ND ND	56.3	"	,,		"	"	"	

North Creek Analytical - Portland

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Jerry Orlando, Project Manager/QA



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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 210901, PO# 21090 Project Manager: Anne Krarawetter

**Reported:** 07/31/01 12:36

## Volatile Organic Compounds per EPA Method 8260B North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Note
01AMB6U06SL (P1G0209-04) Soil				-	Sampled: 07/0	3/01 Recei	ved: 07/06/0	01	
Hexachlorobutadiene	ND	113	ug/kg dry	1	EPA 8260B	07/16/01	07/17/01	1071301	
2-Hexanone	ND	563	"	"	"	07/10/01	"	10/1301	
sopropylbenzene	ND	113	**	**	**	**	11	**	
o-Isopropyltoluene	ND	113	**	u u	"	"	"	**	
1-Methyl-2-pentanone	ND	282	"	**	**	**	**	11	
Methyl tert-butyl ether	ND	56.3	"	**	**	"	"	**	
Methylene chloride	ND	282	n		0	"	**	11	
Naphthalene	ND	113	u u	**	tt	"	"	"	
n-Propylbenzene	ND	56.3	"	**	**	**		,,	
Styrene	ND	56.3	"		"	n		,,	
,1,1,2-Tetrachloroethane	ND	56.3	"	**		11	**	"	
,1,2,2-Tetrachloroethane	ND	56.3	**	*1	*1	**		**	
Tetrachloroethene	ND	56.3	**		"	"	**	"	
Toluene	ND	56.3	"	11	**	11	н	11	
,2,3-Trichlorobenzene	ND	56.3	**	11	**	**	**	**	
,2,4-Trichlorobenzene	ND	56.3	"	11	u	"	**	"	
,1,1-Trichloroethane	ND	56.3		**	n.	,,	**	**	
,1,2-Trichloroethane	ND	56.3	"	n	**	**		**	
Trichloroethene	ND	56.3	**	"	**	"	n	"	
richlorofluoromethane	ND	56.3	11	"	**	,,	11	"	
,2,3-Trichloropropane	ND	56.3	"	"	"	,,	**	"	
,2,4-Trimethylbenzene	ND	56.3	H	"	**	11	**	"	
,3,5-Trimethylbenzene	ND	56.3	**	**	**	11	**	**	
inyl chloride	ND	56.3	**	11	"	**	"	**	
-Xylene	ND	56.3	n	n .	"	**	"	*1	
n,p-Xylene	ND	113	**	п	II.	11	"	"	
Surr: 4-BFB	99.2 %	70-130							
Surr: 1,2-DCA-d4	81.4 %	70-130							
Surr: Dibromofluoromethane	84.4 %	70-130							
Surr: Toluene-d8	98.4 %	70-130							

North Creek Analytical - Portland

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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 210901, PO# 21090 Project Manager: Anne Krarawetter

Reported: 07/31/01 12:36

## Polynuclear Aromatic Compounds per EPA 8270M-SIM North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMB6U03SL (P1G0209-01) Soil			· · · · · · · · · · · · · · · · · · ·		Sampled: 07/0	3/01 Recei	ived: 07/06/0		
Acenaphthene	ND	13.4	ug/kg dry	1	EPA 8270m	07/17/01	07/19/01		
Acenaphthylene	ND	13.4	"	11	# #	07/17/01	0//19/01	1071349	
Anthracene	ND	13.4	**	**	11	11		**	
Benzo (a) anthracene	ND	13.4		**		"	11		
Benzo (a) pyrene	ND	13.4	**	**	**		,,	"	
Benzo (b) fluoranthene	ND	13.4	**	.,	**	,,	"	"	
Benzo (ghi) perylene	ND	13.4	"	**	"		"	"	
Benzo (k) fluoranthene	ND	13.4	*	**	"	"	"	"	
Chrysene	ND	13.4	"	"	*1	,,	"		
Dibenzo (a,h) anthracene	ND	13.4	"	"	,,	,,	"	"	
Fluoranthene	18.2	13.4	**	**	,,		**	"	
Fluorene	ND	13.4	**	"	,,	,,	"	"	
Indeno (1,2,3-cd) pyrene	ND	13.4		**		**	"		
Naphthalene	ND ND	13.4	"	,,	"	"		"	
Phenanthrene	ND ND	13.4	"	"	"	"	**	11	
Pyrene	17.7	13.4	"	"	"	**	"	"	
Surr: Fluorene-d10	73.5 %								
Surr: Pyrene-d10	73.3 % 118 %	40-150							
Surr: Benzo (a) pyrene-d12		40-150							
5 20120 (a) pyrene-a12	86.0 %	40-150							
01AMB6U04SL (P1G0209-02) Soil	86.0 %	40-150		S	Sampled: 07/03	3/01 Recei	ved: 07/06/0	)1	
	86.0 % ND		ug/kg drv		<del></del>			······································	
01AMB6U04SL (P1G0209-02) Soil		13.4 13.4	ug/kg dry	S 1 "	Sampled: 07/03 EPA 8270m	3/01 Recei 07/17/01	ved: 07/06/0	1071349	
01AMB6U04SL (P1G0209-02) Soil Acenaphthene	ND	13.4 13.4		1	EPA 8270m	07/17/01	07/20/01	1071349	
01AMB6U04SL (P1G0209-02) Soil Acenaphthene Acenaphthylene	ND ND	13.4	"	1 "	EPA 8270m	07/17/01	07/20/01	1071349	
01AMB6U04SL (P1G0209-02) Soil Acenaphthene Acenaphthylene Anthracene Benzo (a) anthracene	ND ND ND ND	13.4 13.4 13.4 13.4	**	1	EPA 8270m	07/17/01	07/20/01	1071349	
01AMB6U04SL (P1G0209-02) Soil Acenaphthene Acenaphthylene Anthracene	ND ND ND	13.4 13.4 13.4	"	1	EPA 8270m	07/17/01	07/20/01	1071349	
O1AMB6U04SL (P1G0209-02) Soil Acenaphthene Acenaphthylene Anthracene Benzo (a) anthracene Benzo (a) pyrene	ND ND ND ND	13.4 13.4 13.4 13.4 13.4	n n	1	EPA 8270m	07/17/01	07/20/01	1071349	
O1AMB6U04SL (P1G0209-02) Soil Acenaphthene Acenaphthylene Anthracene Benzo (a) anthracene Benzo (a) pyrene Benzo (b) fluoranthene	ND ND ND ND ND	13.4 13.4 13.4 13.4 13.4 13.4	"	1	EPA 8270m	07/17/01	07/20/01	1071349	
O1AMB6U04SL (P1G0209-02) Soil  Acenaphthene Acenaphthylene Anthracene Benzo (a) anthracene Benzo (a) pyrene Benzo (b) fluoranthene Benzo (ghi) perylene	ND ND ND ND ND ND	13.4 13.4 13.4 13.4 13.4 13.4 13.4	11 11 11 11	1	EPA 8270m	07/17/01	07/20/01	1071349	
O1AMB6U04SL (P1G0209-02) Soil  Acenaphthene Acenaphthylene Anthracene Benzo (a) anthracene Benzo (a) pyrene Benzo (b) fluoranthene Benzo (ghi) perylene Benzo (k) fluoranthene	ND	13.4 13.4 13.4 13.4 13.4 13.4 13.4 13.4	n n n	1	EPA 8270m	07/17/01	07/20/01	1071349	
O1AMB6U04SL (P1G0209-02) Soil  Acenaphthene Acenaphthylene Anthracene Benzo (a) anthracene Benzo (b) fluoranthene Benzo (ghi) perylene Benzo (k) fluoranthene Chrysene	ND N	13.4 13.4 13.4 13.4 13.4 13.4 13.4 13.4	" " " " " " " " " "	1	EPA 8270m	07/17/01	07/20/01	1071349	
Acenaphthene Acenaphthylene Anthracene Benzo (a) anthracene Benzo (b) fluoranthene Benzo (ghi) perylene Benzo (k) fluoranthene Benzo (k) fluoranthene Chrysene Dibenzo (a,h) anthracene	ND N	13.4 13.4 13.4 13.4 13.4 13.4 13.4 13.4	n n n n n n n n n n n n n n n n n n n	1	EPA 8270m	07/17/01	07/20/01	1071349	
O1AMB6U04SL (P1G0209-02) Soil  Acenaphthene Acenaphthylene Anthracene Benzo (a) anthracene Benzo (b) fluoranthene Benzo (ghi) perylene Benzo (k) fluoranthene Chrysene Dibenzo (a,h) anthracene Fluoranthene Fluorene	ND N	13.4 13.4 13.4 13.4 13.4 13.4 13.4 13.4	11 11 11 11 11 11 11 11 11 11 11 11 11	1	EPA 8270m	07/17/01	07/20/01	1071349	
Olamber (Plantage Plantage Pla	ND N	13.4 13.4 13.4 13.4 13.4 13.4 13.4 13.4		1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	EPA 8270m	07/17/01	07/20/01	1071349	
O1AMB6U04SL (P1G0209-02) Soil  Acenaphthene Acenaphthylene Anthracene Benzo (a) anthracene Benzo (b) fluoranthene Benzo (ghi) perylene Benzo (k) fluoranthene Chrysene Dibenzo (a,h) anthracene Fluoranthene Fluorene Indeno (1,2,3-cd) pyrene Naphthalene	ND N	13.4 13.4 13.4 13.4 13.4 13.4 13.4 13.4	11 11 11 11 11 11 11 11 11 11 11 11 11	1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	EPA 8270m	07/17/01	07/20/01	1071349	
Olamber (Plantage Plantage Pla	ND N	13.4 13.4 13.4 13.4 13.4 13.4 13.4 13.4			EPA 8270m	07/17/01	07/20/01	1071349	

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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 210901, PO# 21090 Project Manager: Anne Krarawetter

Reported: 07/31/01 12:36

### Polynuclear Aromatic Compounds per EPA 8270M-SIM North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMB6U04SL (P1G0209-02) Soil					Sampled: 07/0	3/01 Rece	ived: 07/06/		
Surr: Pyrene-d10	118 %	40-150			Sampled: 0770.	3/01 Rece	ived. 07/06/	01	<del></del>
Surr: Benzo (a) pyrene-d12	89.2 %	40-150							
01AMB6U05SL (P1G0209-03) Soil					Sampled: 07/0	3/01 Rece	ived: 07/06/	01	
Acenaphthene	ND	13.4	ug/kg dry	1	EPA 8270m	07/17/01	07/20/01	1071349	
Acenaphthylene	ND	13.4	"	,,	" "	07/17/01 H	07/20/01	10/1349	
Anthracene	ND	13.4	"	.,	n	"	,,	"	
Benzo (a) anthracene	ND	13.4		**	**	"	**	"	
Benzo (a) pyrene	ND	13.4	**	**	**	**	**	n	
Benzo (b) fluoranthene	ND	13.4	"	н	11	"	"	,,	
Benzo (ghi) perylene	ND	13.4	"	**	"	"	0		
Benzo (k) fluoranthene	ND	13.4	**	**	**	**	11		
Chrysene	ND	13.4	**	**	**	tt	"		
Dibenzo (a,h) anthracene	ND	13.4		11	,,	"	"		
Fluoranthene	ND	13.4	"	**	11	**	"	"	
Fluorene	ND	13.4	tt	**	11	"	**	11	
Indeno (1,2,3-cd) pyrene	ND	13.4	**	,,	*1	**	,,	u	
Naphthalene	ND	13.4	**			,,	"		
Phenanthrene	ND	13.4	"	11	"			" II	
Pyrene	ND	13.4	11	"	ч	,,	11	"	
Surr: Fluorene-d10	74.8 %	40-150							
Surr: Pyrene-d10	125 %	40-150							
Surr: Benzo (a) pyrene-d12	92.8 %	40-150							
01AMB6U06SL (P1G0209-04) Soil					Sampled: 07/03	3/01 Recei	ived: 07/06/0	)1	
Acenaphthene	ND	13.4	ug/kg dry	1	EPA 8270m	07/17/01	07/20/01	1071349	
Acenaphthylene	ND	13.4	"	"	"	"	"	10/1349	
Anthracene	ND	13.4	**	11			n.	,,	
Benzo (a) anthracene	ND	13.4	"	11	n		11	"	
Benzo (a) pyrene	ND	13.4	**	**		11	11	"	
Benzo (b) fluoranthene	ND	13.4	**	**	**	**	Ħ	"	
Benzo (ghi) perylene	ND	13.4	**	"	**	**	"	"	
Benzo (k) fluoranthene	ND	13.4	**	"	"	**	"	11	
Chrysene	ND	13.4		**	11	**	**	**	
Dibenzo (a,h) anthracene	ND	13.4	**	n	**	**	"	**	
Fluoranthene	ND	13.4	**	"	11	**	**	"	
Fluorene	ND	13.4	**		11	0	"	II.	
ndeno (1,2,3-cd) pyrene	ND	13.4	"	**	"		"	11	

North Creek Analytical - Portland



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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 210901, PO# 21090 Project Manager: Anne Krarawetter

Reported: 07/31/01 12:36

## Polynuclear Aromatic Compounds per EPA 8270M-SIM North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMB6U06SL (P1G0209-04) Soil		_			Sampled: 07/0	3/01 Rece	ived: 07/06/	01	
Naphthalene Phenanthrene <b>Pyrene</b>	ND ND 13.7	13.4 13.4 13.4	ug/kg dry "	1	EPA 8270m	07/17/01	07/20/01	1071349	<u> </u>
Surr: Fluorene-d10 Surr: Pyrene-d10 Surr: Benzo (a) pyrene-d12	68.3 % 108 % 83.4 %	40-150 40-150 40-150							



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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 210901, PO# 21090 Project Manager: Anne Krarawetter

Reported: 07/31/01 12:36

## Percent Dry Weight (Solids) per Standard Methods North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMB6U03SL (P1G0209-01) Soil					Sampled: 07/0	)3/01 Recei	ived: 07/06/0	01	
% Solids	84.9	1.00 %	by Weigh	1	NCA SOP	07/11/01	07/12/01	1071131	
01AMB6U04SL (P1G0209-02) Soil					Sampled: 07/0	03/01 Recei	ived: 07/06/(	01	
% Solids	87.0	1.00 %	by Weight	1	NCA SOP	07/11/01	07/12/01	1071131	
01AMB6U05SL (P1G0209-03) Soil					Sampled: 07/0	03/01 Recei	ived: 07/06/0	01	
% Solids	87.6	1.00 %	by Weight	1	NCA SOP	07/11/01	07/12/01	1071131	
01AMB6U06SL (P1G0209-04) Soil				9	Sampled: 07/0	03/01 Recei	ved: 07/06/0	01	
% Solids	92.2	1.00 %	by Weight	1	NCA SOP	07/11/01	07/12/01	1071131	

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%REC

60-140

Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Analyte

Xylenes (total)

Surr: a,a,a-TFT (FID)

Project: Amchitka

Project Number: 210901, PO# 21090 Project Manager: Anne Krarawetter

Reported: 07/31/01 12:36

RPD

Gasoline Range Organics (n-Hexane to <n-Decane) and BTEX per AK101 and EPA 8021B - Quality Control

Spike

2.50

Source

129

	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 1071099 - EPA 5035										
Blank (1071099-BLK1)				Prenare	d & Analy	zed: 07/10	0/01			
Gasoline Range Organics	ND	4.00	mg/kg		<u>a ce i mary</u>	200. 07/10	0/01			<del></del>
Benzene	ND	0.100	"							
Toluene	ND	0.100	ıı							
Ethylbenzene	ND	0.100	n							

LCS (1071099-BS1)			Prepared &	Analyzed: 07/10	0/01
Surr: a,a,a-TFT (PID)	2.43	"	2.50	97.2	60-140

ND

3.22

Reporting

0.100

Gasoline Range Organics	68.6	4.00	mg/kg	62.5	110	70-120
Surr: a,a,a-TFT (FID)	3.41		"	2.50	136	60-140

LCS (1071099-BS2)								
Benzene	0.795	0.100	mg/kg	1.00	79.5	70-120		
Toluene	0.777	0.100	**	1.00	77.7	70-120		
Ethylbenzene	0.803	0.100	**	1.00	80.3	70-120		
Xylenes (total)	2.51	0.100	"	3.00	83.7	70-120		

Surr: a,a,a-TFT (PID)	2.47		"	2.50	98.8	60-140		-
LCS Dup (1071099-BSD1)				Prepared & A	Analyzed: 07/1	0/01		
Gasoline Range Organics	68.6	4.00	mg/kg	62.5	110	70-120	0.00	20

Surr: a,a,a-TFT (FID)	3.46		"	2.50	138	60-140		·
LCS Dup (1071099-BSD2)				Prepared & A	Analyzed: 07/1	0/01		
Benzene	0.819	0.100	mg/kg	1.00	81.9	70-120	2.97	200
Toluene	0.799	0.100	II .	1.00	79.9	70-120	2.79	200
Ethylbenzene	0.835	0.100	"	1.00	83.5	70-120	3.91	200
Xylenes (total)	2.60	0.100	"	3.00	86.7	70-120	3.52	200
Surr: a,a,a-TFT (PID)	2.51		"	2.50	100	60-140		

North Creek Analytical - Portland

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Project: Amchitka

Project Number: 210901, PO# 21090 Project Manager: Anne Krarawetter

Reported: 07/31/01 12:36

# Gasoline Range Organics (n-Hexane to <n-Decane) and BTEX per AK101 and EPA 8021B - Quality Control

North Creek Analytical - Portland
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Analyte	Result	Reporting Limit	Units	Spike	Source	0/250	%REC		RPD	
		Limit	Onits	Level	Result	%REC	Limits	RPD	Limit	Notes
The										

#### Batch 1071099 - EPA 5035

Duplicate (1071099-DUP1)	Sour	ce: P1G0209-01	Prepared & Analyzed: 07/10/01							
Gasoline Range Organics	ND	4.00 mg/kg dry		ND			8.22	50		
Surr: a,a,a-TFT (FID)	12.0	n n	11.1		108	60-140				
Duplicate (1071099-DUP2)	Sour	ce: P1G0205-01	Prepared	l & ∆nalv	zad: 07/1	0/01				

Duplicate (1071099-DUP2)	Sour	ce: P1G0205-01	Prepared & Analyzed	d: 07/10	0/01	
Gasoline Range Organics	ND	2.64 mg/kg dry	ND			50
Surr: a,a,a-TFT (FID)	6.66	"	8.48	78.5	60-140	

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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 210901, PO# 21090 Project Manager: Anne Krarawetter

Reported: 07/31/01 12:36

# Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/103 - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1071212 - EPA 3550 Fuels	_									
Blank (1071212-BLK1)				Prepare	d: 07/12/0	1 Analyz	ed: 07/14/0	01		
Diesel Range Organics	ND	25.0	mg/kg		u. 077 1270	7 71114192	Cu. 07/14/	01		
Residual Range Organics	ND	50.0	"							
Surr: 1-Chlorooctadecane	3.88		"	4.80		80.8	75-125			<del></del>
Surr: Triacontane	6.77		"	6.25		108	50-150			
LCS (1071212-BS1)				Prenare	d: 07/12/0	1 Analyz	ed: 07/14/0	0.1		
Diesel Range Organics	116	25.0	mg/kg	129	u. 07/12/0	89.9	60-130	01		
Residual Range Organics	81.7	50.0	"	79.0		103	60-130			
Surr: 1-Chlorooctadecane	3.56		"	4.80		74.2	75-125			S-07
Surr: Triacontane	6.75		"	6.25		108	50-150			5-07
LCS Dup (1071212-BSD1)				Prepare	d: 07/12/0°	1 Analyz	ed: 07/14/0	) 1		
Diesel Range Organics	112	25.0	mg/kg	129		86.8	60-130	3.51	20	
Residual Range Organics	78.6	50.0	"	79.0		99.5	60-130	3.87	20	
Surr: 1-Chlorooctadecane	3.59		"	4.80		74.8	75-125			S-07
Surr: Triacontane	6.57		"	6.25		105	50-150			B-07
<b>Duplicate (1071212-DUP1)</b>	Sou	rce: P1G02	08-01	Prepare	d: 07/12/01	l Analyz	ed: 07/16/0	01		
Diesel Range Organics	92.2	25.0	mg/kg dry		158			52.6	50	Q-14
Residual Range Organics	ND	50.0			ND			0.00	50	
Surr: 1-Chlorooctadecane	4.78		"	5.36		89.2	75-125			
Surr: Triacontane	8.25		"	6.98		118	50-150			
Duplicate (1071212-DUP2)	Sou	rce: P1G02	10-05	Prepare	d: 07/12/01	l Analyz	ed: 07/16/0	)1		
Diesel Range Organics	ND	25.0	mg/kg dry		ND				50	
Residual Range Organics	88.9	50.0	**		174			64.7	50	Q-14
Surr: 1-Chlorooctadecane	3.66		"	5.40		67.8	75-125			S-07
Surr: Triacontane	6.49		"	7.03		92.3	50-150			

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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Analyte

Project: Amchitka

Project Number: 210901, PO# 21090 Project Manager: Anne Krarawetter

Reported: 07/31/01 12:36

## Total Metals per EPA 6000/7000 Series Methods - Quality Control

1101	ui Creek	Anaiyt	<u>icai - Po</u>	<u>ortland</u>				
Result	Reporting Limit	Units	Spike Level	Source	0/DEC	%REC	RPD	

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	RPD Limit	Notes
Batch 1071499 - EPA 3050						-			Limit	Notes
Blank (1071499-BLK1)				Prepare	d: 07/20/0	1 Analyz	zed: 07/21/0	\1		· . · ·
Arsenic	ND	0.500	mg/kg	Trepare	u. 07/20/0	1 Allaly2	zea: 07/21/C	<u> </u>		
Barium	ND	1.00	"							
Cadmium	ND	0.500	tt							
Chromium	ND	0.500	"							
Lead	ND	0.500	"							
Nickel	ND	1.00	"							
Vanadium	ND	2.50	**							
LCS (1071499-BS1)				Prepare	d: 07/20/0:	l Anglyz	ed: 07/21/0	\1		
Arsenic	11.0	0.500	mg/kg	10.0	<u> 07/20/0</u>	110	80-120			
Barium	11.0	1.00	"	10.0		110	80-120			
Cadmium	10.9	0.500	"	10.0		109	80-120			
Chromium	11.7	0.500	11	10.0		117	80-120			
ead	10.7	0.500	11	10.0		107	80-120			
Nickel	11.5	1.00	Ħ	10.0		115	80-120			
Vanadium	11.4	2.50	"	10.0		114	80-120			
Duplicate (1071499-DUP1)	Sour	ce: P1G02	09-01	Prepare	d: 07/20/01	l Analyz	ed: 07/21/0	1		
Arsenic	1.92	0.500	mg/kg dry	- <del></del>	1.93	<del>-</del> -		0.519	40	
Barium	161	1.00	"		136			16.8	40	
Cadmium	ND	0.500	"		ND				40	
Chromium	6.41	0.500	"		6.06			5.61	40	
ead	7.45	0.500	"		7.93			6.24	40	
Nickel	11.7	1.00	"		11.5			1.72	40	
Vanadium	192	2.50	n		178			7.57	40	
Matrix Spike (1071499-MS1)	Sour	ce: P1G02	09-01	Prepare	d: 07/20/01	l Analyz	ed: 07/21/0	1		
Arsenic	15.4	0.500	mg/kg dry	11.8	1.93	114	75-125			
Barium	180	1.00	**	11.8	136	NR	75-125			Q-
Cadmium	12.5	0.500	"	11.8	ND	106	75-125			
Chromium	23.2	0.500	"	11.8	6.06	145	75-125			Q-
Lead	19.9	0.500	"	11.8	7.93	101	75-125			,
Nickel	26.4	1.00	11	11.8	11.5	126	75-125			Q-
/anadium	214	2.50	11	11.8	178	NR	75-125			Q-

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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 210901, PO# 21090 Project Manager: Anne Krarawetter

Reported: 07/31/01 12:36

## Total Metals per EPA 6000/7000 Series Methods - Quality Control

#### North Creek Analytical - Portland

1									_		
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	

#### Batch 1071499 - EPA 3050

Matrix Spike (1071499-MS2) Arsenic	Sour	ce: P1G01	137-02	Prepare	ed: 07/20/0	1 Analy	zed: 07/21/01	
	14.1	0.500	mg/kg dry	12.0	1.97	101	75-125	
Barium	199	1.00	"	12.0	174	NR	75-125	Q-03
Cadmium	12.1	0.500	**	12.0	ND	101	75-125	Q-03
Chromium	30.8	0.500	"	12.0	18.3	104	75-125	
Lead	18.4	0.500	"	12.0	6.70	97.5	75-125	
Nickel	34.0	1.00	"	12.0	21.0	108	75-125	
Vanadium	147	2.50	TT .	12.0	137	83.3	75-125	

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Project: Amchitka

Project Number: 210901, PO# 21090 Project Manager: Anne Krarawetter

Reported: 07/31/01 12:36

**RPD** 

## Polychlorinated Biphenyls per EPA Method 8082 - Quality Control

North Creek Analytical - Portland	Noi	th C	reek	Analy	tical -	- Portla	nđ
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Spike

37.2

37.2

Source

Reporting

31.0

40.5

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 1071259 - EPA 3550						· · · · · · · · · · · · · · · · · · ·				
Blank (1071259-BLK1)				Prepare	d: 07/14/0	1 Analyz	ed: 07/18/0	)1		
Aroclor 1016	ND	67.0	ug/kg			1 11114192	07/10/0			
Aroclor 1221	ND	134	"							
Aroclor 1232	ND	67.0	**							
Aroclor 1242	ND	67.0	11							
Aroclor 1248	ND	67.0	"							
Aroclor 1254	ND	67.0	H							
Aroclor 1260	ND	67.0	11							
Surr: 2,4,5,6-Tetrachloro-m-xylene	31.7		"	33.3		95.2	63-119	· · · · · ·		
Surr: Decachlorobiphenyl	36.5		"	33.3		110	52-131			
LCS (1071259-BS1)				Prepare	d: 07/14/0	1 Analyz	ed: 07/18/0	)1		
Aroclor 1016	367	67.0	ug/kg	333		110	57-132			
Aroclor 1260	360	67.0	**	333		108	60-136			
Surr: 2,4,5,6-Tetrachloro-m-xylene	35.0		"	33.3		105	63-119			
Surr: Decachlorobiphenyl	41.0		"	33.3		123	52-131			
Matrix Spike (1071259-MS1)	Sour	ce: P1G02	08-01	Prepare	d: 07/14/0	1 Analyz	ed: 07/18/0	)1		
Aroclor 1016	323	67.0	ug/kg dry	372	ND	86.8	57-132			
Aroclor 1260	359	67.0	**	372	ND	96.5	60-136			
Surr: 2,4,5,6-Tetrachloro-m-xylene	29.8		"	37.2		80.1	63-119			
Surr: Decachlorobiphenyl	40.0		"	37.2		108	52-131			
Matrix Spike Dup (1071259-MSD1)	Sour	ce: P1G02	08-01	Prepare	d: 07/14/0	1 Analyza	ed: 07/18/0	)1		
Aroclor 1016	340	67.0	ug/kg dry	372	ND	91.4	57-132	5.13	50	
Aroclor 1260	370	67.0	11	372	ND	99.5	60-136	3.02	50	

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Surr: 2,4,5,6-Tetrachloro-m-xylene

Surr: Decachlorobiphenyl

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63-119

52-131

83.3

109

Jerry Orlando, Project Manager/QA



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Project: Amchitka

Project Number: 210901, PO# 21090 Project Manager: Anne Krarawetter

Reported: 07/31/01 12:36

## Volatile Organic Compounds per EPA Method 8260B - Quality Control

North Creek Analytical - Portland

Analyte Reporting Spike Source %REC RPD  Result Limit Units Level Reputs %REC RPD									
Emit Offits Level Result %REC Limits RPD Limit Note	Analyte	Result	 Units	Spike Level	Source Result	%REC	%REC Limits	RPD	 Notes

Batch	1071301	- EPA	5035
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Blank (1071301-BLK1)				
Acetone				Prepared & Analyzed: 07/16/01
Benzene	ND	25.0	ug/kg	
Bromobenzene	ND	1.00	"	
Bromochloromethane	ND	1.00	**	
Bromodichloromethane	ND	1.00	"	
Bromoform	ND	1.00	"	
Bromomethane	ND	1.00	**	
2-Butanone	ND	5.00	"	
	ND	10.0	17	· · · · · · · · · · · · · · · · · · ·
n-Butylbenzene	ND	5.00	**	
sec-Butylbenzene	ND	1.00	**	
tert-Butylbenzene	ND	1.00	11	
Carbon disulfide	ND	10.0	**	
Carbon tetrachloride	ND	1.00	Ħ	
Chlorobenzene	ND	1.00	"	
Chloroethane	ND	1.00	**	
Chloroform	ND	1.00	**	
Chloromethane	ND	5.00	11	
2-Chlorotoluene	ND	1.00	n	
4-Chlorotoluene	ND	1.00	"	
1,2-Dibromo-3-chloropropane	ND	5.00	0	
Dibromochloromethane	ND	1.00	11	
1,2-Dibromoethane	ND	1.00	11	
Dibromomethane	ND	1.00	11	
1,2-Dichlorobenzene	ND	1.00	11	
1,3-Dichlorobenzene	ND	1.00	**	
1,4-Dichlorobenzene	ND	1.00	**	
Dichlorodifluoromethane	ND	5.00	"	
1,1-Dichloroethane	ND	1.00	"	
1,2-Dichloroethane	ND	1.00	n	
1,1-Dichloroethene	ND	1.00	"	
cis-1,2-Dichloroethene	ND	1.00	11	
trans-1,2-Dichloroethene	ND	1.00	"	
1,2-Dichloropropane	ND	1.00	"	
1,3-Dichloropropane	ND	1.00	**	
2,2-Dichloropropane	ND	1.00	"	
1,1-Dichloropropene	ND	1.00	"	

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Project: Amchitka

Project Number: 210901, PO# 21090 Project Manager: Anne Krarawetter

Reported: 07/31/01 12:36

## Volatile Organic Compounds per EPA Method 8260B - Quality Control

North Creek Analytical - Portland

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes

Batch	10	71301 -	<b>EPA</b>	5035

Blank (1071301-BLK1)				Prepared & Analyzed: 07/16/01
cis-1,3-Dichloropropene	ND	1.00	ug/kg	
trans-1,3-Dichloropropene	ND	1.00	"	
Ethylbenzene	ND	1.00	**	
Hexachlorobutadiene	ND	2.00	"	
2-Hexanone	ND	10.0	"	
Isopropylbenzene	ND	2.00	**	
p-Isopropyltoluene	ND	2.00	**	
4-Methyl-2-pentanone	ND	5.00		
Methyl tert-butyl ether	ND	1.00	**	
Methylene chloride	ND	5.00	ft	
Naphthalene	ND	2.00	**	
n-Propylbenzene	ND	1.00		
Styrene	ND	1.00	"	
1,1,1,2-Tetrachloroethane	ND	1.00	11	
1,1,2,2-Tetrachloroethane	ND	1.00	**	
Tetrachloroethene	ND	1.00	**	
Toluene	ND	1.00	***	
1,2,3-Trichlorobenzene	ND	1.00		
1,2,4-Trichlorobenzene	ND	1.00		
1,1,1-Trichloroethane	ND	1.00	n .	
1,1,2-Trichloroethane	ND	1.00	"	
Trichloroethene	ND	1.00	**	
Trichlorofluoromethane	ND	1.00	"	
1,2,3-Trichloropropane	ND	1.00	11	
1,2,4-Trimethylbenzene	ND	1.00	11	
1,3,5-Trimethylbenzene	ND	1.00	**	
Vinyl chloride	ND	1.00	11	
o-Xylene	ND	1.00	**	
m,p-Xylene	ND	2.00	**	
Surr: 4-BFB	19.6		"	20.0 98.0 70-130
Surr: 1,2-DCA-d4	16.8		"	20.0 84.0 70-130
Surr: Dibromofluoromethane	17.2		n	20.0 86.0 70-130
Surr: Toluene-d8	19.2		"	20.0 96.0 70-130

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%REC

Limits

RPD

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Batch 1071301 - EPA 5035

Analyte

Project: Amchitka

Project Number: 210901, PO# 21090 Project Manager: Anne Krarawetter

Reported: 07/31/01 12:36

RPD

Limit

Notes

## Volatile Organic Compounds per EPA Method 8260B - Quality Control

#### North Creek Analytical - Portland

Units

Spike

Level

Source

Result

%REC

Reporting

Limit

Result

LCS (1071301-BS1)				Prepared &	Analyzed: 07/1	6/01			
Benzene	20.4	1.00	ug/kg	20.0	102	80-135			
Chlorobenzene	19.9	1.00	11	20.0	99.5	80-135			
l,1-Dichloroethene	18.7	1.00	***	20.0	93.5	60-150			
Toluene	21.0	1.00	**	20.0	105	80-130			
Trichloroethene	20.1	1.00	"	20.0	100	70-135			
Surr: 4-BFB	20.5		"	20.0	102	70-130			
Surr: 1,2-DCA-d4	17.4		"	20.0	87.0	70-130			
Surr: Dibromofluoromethane	18.4		"	20.0	92.0	70-130			
Surr: Toluene-d8	18.9		"	20.0	94.5	70-130			
LCS Dup (1071301-BSD1)				Prepared &	Analyzed: 07/1	6/01			
Benzene	20.3	1.00	ug/kg	20.0	102	80-135	0.491	25	
Chlorobenzene	19.7	1.00	tt .	20.0	98.5	80-135	1.01	25	
1,1-Dichloroethene	18.8	1.00	11	20.0	94.0	60-150	0.533	25	
Toluene	20.7	1.00	11	20.0	104	80-130	1.44	25	
Trichloroethene	19.8	1.00	**	20.0	99.0	70-135	1.50	25	
Surr: 4-BFB	20.5		n	20.0	102	70-130			
Surr: 1,2-DCA-d4	17.3		"	20.0	86,5	70-130			
Surr: Dibromofluoromethane	18.5		"	20.0	92.5	70-130			
Surr: Toluene-d8	18.9		"	20.0	94.5	70-130			
Matrix Spike (1071301-MS1)	Sour	ce: P1G020	08-01	Prepared &	Analyzed: 07/1	6/01			

	Sour	ee. 1 x G02	000 UI	ricparce	u ce mian	yzcu. 0//1	0/01	
Benzene	1810	83.7	ug/kg dry	1870	ND	96.8	60-135	
Chlorobenzene	1760	83.7	Ħ	1870	ND	94.1	65-125	
1,1-Dichloroethene	1870	83.7	Ħ	1870	ND	100	60-135	
Toluene	1870	83.7	"	1870	ND	100	60-125	
Trichloroethene	1730	83.7	"	1870	ND	92.5	60-125	
Surr: 4-BFB	19.5		"	18.7		104	70-130	 
Surr: 1,2-DCA-d4	15.7		"	18.7		84.0	70-130	
Surr: Dibromofluoromethane	16.9		"	18.7		90.4	70-130	
Surr: Toluene-d8	17.9		"	18.7		95.7	70-130	

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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 210901, PO# 21090 Project Manager: Anne Krarawetter

Reported: 07/31/01 12:36

# Volatile Organic Compounds per EPA Method 8260B - Quality Control

#### North Creek Analytical - Portland

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes

#### Batch 1071301 - EPA 5035

Matrix Spike Dup (1071301-MSD1)	Sour	ce: P1G02	208-01	Prepare	d & Anal	yzed: 07/1	6/01		
Benzene	1890	83.7	ug/kg dry	1870	ND	101	60-135	4.32	25
Chlorobenzene 1,1-Dichloroethene	1830	83.7	"	1870	ND	97.9	65-125	3.90	25 25
Toluene	1950	83.7	"	1870	ND	104	60-135	4.19	25
Trichloroethene	1960 1820	83.7	**	1870	ND	105	60-125	4.70	25
Surr: 4-BFB		83.7		1870	ND	97.3	60-125	5.07	25
Surr: 1,2-DCA-d4	19.3		"	18.7		103	70-130		
Surr: Dibromofluoromethane	15.5 16.7		"	18.7		82.9	70-130		
Surr: Toluene-d8	10.7 17.9		"	18.7		89.3	70-130		
	17.9		"	18.7		95.7	70-130		

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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 210901, PO# 21090 Project Manager: Anne Krarawetter

Reported:

07/31/01 12:36

# Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1071349 - EPA 3550								- KID	Lillit	Notes

Blank (1071349-BLK1)				Dronous 2: 0:	7/17/01		
Acenaphthene	ND	13.4	ug/kg	rrepared: 0	7/17/01 Analy	zed: 07/19/01	
Acenaphthylene	ND	13.4	ug/kg				
Anthracene	ND	13.4	**				
Benzo (a) anthracene	ND	13.4	#				
Benzo (a) pyrene	ND	13.4	,,				
Benzo (b) fluoranthene	ND	13.4	н				
Benzo (ghi) perylene	ND	13.4	"				
Benzo (k) fluoranthene	ND	13.4	**				
Chrysene	ND	13.4	**				
Dibenzo (a,h) anthracene	ND	13.4	**				
Fluoranthene	ND	13.4	п				
Fluorene	ND	13.4	"				
Indeno (1,2,3-cd) pyrene	ND	13.4	Ħ				
Naphthalene	ND	13.4	н				
Phenanthrene	ND	13.4	**				
Pyrene	ND	13.4	11				
Surr: Fluorene-d10	62.7			83.3			
Surr: Pyrene-d10	81.5		"	83.3	75.3	40-150	
Surr: Benzo (a) pyrene-d12	70.1		"	83.3	97.8 84.2	40-150 40-150	
LCS (1071349-BS1)							
Acenaphthene	130	13.4	ug/kg	Prepared: 07		zed: 07/19/01	
Benzo (a) pyrene	142	13.4	ug/kg	167	77.8 85.0	33-139 45-149	
Pyrene	139	13.4	"	167	83.0 83.2	45-149 39-138	
Surr: Fluorene-d10	65.2		"	83.3			
Surr: Pyrene-d10	84.7		,,	83.3	78.3 102	40-150	
Surr: Benzo (a) pyrene-d12	75.2		"	83.3	90.3	40-150	

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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 21()901, PO# 21090 Project Manager: Anne Krarawetter

Reported:

07/31/01 12:36

# Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control

North (	<u>Creek</u>	Analy	vtical -	Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes

Batch 1071349	- EPA	3550
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Matrix Spike (1071349-MS1)	Sour	ce: P1G0206	 i_01	Prepare	d: 07/17/0	1	1 07/10		<del></del>	
Acenaphthene	143		g/kg dry				zed: 07/19/	01		
Benzo (a) pyrene	165	13.4 ug	g/kg uly	189	ND	75.7	33-139			
Pyrene				189	ND	87.3	45-149			
	156	13.4	**	189	ND	82.5	39-138			
Surr: Fluorene-d10	139		"	94.4		147	40-150			4.01
Surr: Pyrene-d10	177		"	94.4		188	40-150			A-01
Surr: Benzo (a) pyrene-d12	164		"	94.3		174	40-150			A-01
Matrix Spike Dup (1071349-MSD1)	Sour	ce: P1G0206	-01	Prepared	i: 07/17/0		ed: 07/19/	01		A-01
Acenaphthene	126	13.4 ug	y/kg dry	189	ND	66.7	33-139	12.6	60	
Benzo (a) pyrene	166	13.4	"	189	ND	87.8	45-149	0.604	60	
Pyrene	156	13.4	**	189	ND	82.5	39-138	0.004	60	
Surr: Fluorene-d10	65.7		"	94.4		69.6				
Surr: Pyrene-d10	92.3		"	94.4			40-150			
Surr: Benzo (a) pyrene-d12	86.4		"	94.4		97.8 91.6	40-150 40-150			

North Creek Analytical - Portland



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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 210901, PO# 21090 Project Manager: Anne Krarawetter

Reported:

07/31/01 12:36

# Percent Dry Weight (Solids) per Standard Methods - Quality Control

	Nort	<u>h Creek Analyti</u>	cal - Po	ortland					
Analyte	Result	Reporting Limit Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1071131 - Dry Weight									
Duplicate (1071131-DUP1) % Solids	Source: P1G0120-01			d: 07/11/0	1 Analyz	ed: 07/12/0	01		
70 Solids	86.7	1.00% by Weight		87.2			0.575	20	
Duplicate (1071131-DUP2) % Solids		Source: P1G0120-02		d: 07/11/0	l Analyze	ed: 07/12/0	01		
76 Solids	77.5	1.00 % by Weight		74.5			3.95	20	
Duplicate (1071131-DUP3)	Source: P1G0120-03		Prepared	d: 07/11/0	l Analyze	ed: 07/12/(	)1		
% Solids	73.4	1.00 % by Weight		76.1			3.61	20	
Duplicate (1071131-DUP4)	Source: P1G0064-03		Prepared	d: 07/11/0	l Analyze	ed: 07/12/0	)1		
% Solids	98.6	1.00% by Weight	<del>-</del>	98.9			0.304	20	
Duplicate (1071131-DUP5)	Sour	ce: P1G0064-04	Prepared	1: 07/11/01	Analyze	ed: 07/12/0	11		
% Solids	95.1	1.00 % by Weight		95.2		Ja. 07/12/0	0.105	20	

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Project: Amchitka

Project Number: 210901, PO# 21090 Project Manager: Anne Krarawetter

Reported: 07/31/01 12:36

#### **Notes and Definitions**

A-01	Suspected double surrogate added during extraction.
D-11	Detected hydrocarbons in the heavy/oil range appear to be due to overlap of diesel range hydrocarbons.
Q-02	The spike recovery for this QC sample is outside of established control limits due to sample matrix interference.
Q-03	The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte already present in the sample.
Q-06	Analyses are not controlled on RPD values from sample concentrations less than 5 times the reporting limit.
Q-14	The Spike Recovery and/or RPD is outside of control limits due to a non-homogeneous sample matrix.
S-07	Surrogate recovery is out of control limits. QA criteria are met when one surrogate is within control limits.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. MRLs are adjusted if %Solids are less than 50%.
wet	Sample results reported on a wet weight basis (as received)
RPD	Relative Percent Difference